2. Non-technical Abstract

The object of this study will be to stimulate the immune system of patients who are afflicted with small cell lung cancer to attack their own cancer cells. To do this, white blood cells will be collected from the patients on study, and will be stored in ultra-cold freezers. The patient's will have conventional anti-tumor chemotherapy, and, in some cases, radiation therapy. Following the conventional therapy, the frozen white blood cells will be thawed, and placed into a culture system wherein they will be exposed to special growth hormones that stimulate some of the white blood cells to become special cells known as dendritic cells. In nature, dendritic cells have the function of stimulating immune cells to respond to the proteins of disease causing viruses, bacteria and cells. In this study, the dendritic cells will be modified by the insertion of a gene which codes for a protein referred to as p53, which in turn exists in overabundance on the surface of the patient's lung cancer cells. The p53 gene will be introduced into the dendritic cells using an adenovirus which has had part of its genes removed, and replaced with the p53 gene. Protein produced from the p53 gene will be processed by the dendritic cells and, once injected into the patient, used to stimulate immune cells, known as T-cells, to attack cells with large quantities of p53. As the patient's lung cancer cells overproduce p53, they may be expected to be among the cells, and may possibly be the only cells, that the T-cells attack.